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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,221	09/28/2001	Thomas S. Laubner	17655	5888

7590 03/29/2005
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EXAMINER

WIMER, MICHAEL C

ART UNIT PAPER NUMBER

2828

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/966,221	Applicant(s) LAUBNER ET AL.	
	Examiner Michael C. Wimer	Art Unit 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/4/2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-15 and 17-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 and 17 is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7-15 and 18-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1,3-5,7,8,14,15,18 and 23-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Openlander (6157348) in view of Murphy et al. (4051477).

Regarding Claims 1,3-5,7,8,14,15,18 and 23-36, Openlander describes a microstrip antenna used in a mobile vehicle, in column 1, lines 18-29, where the antenna may be made from p.c. board materials and techniques with an upper patch/disk mounted above a ground plane with the p.c. board therebetween, and the lower ground plane is mounted to metal body of the vehicle. Two ground planes are employed here in such an arrangement. Figures 3 and 4 of

Openlander show the patch 44 disposed over the ground plane 42 via dielectric posts. It would have been obvious to the skilled artisan to employ a p.c. board to support the patch and ground plane as taught by Openlander in column 1. The embodiment in Figures 3 and 4 is to be mounted upon a vehicle body which is the first conductive ground plane claimed. The second ground plane is that 42 which raises the patch 44. A feed means 56 is shown. Murphy et al are cited as teaching that it is known to decrease the radiation angle of a microstrip antenna by raising it above a second ground plane (see Figures 5-7 of Murphy et al). The lens 60 in Openlander lowers the radiation beam below 45 degrees as claimed. It would have been obvious to employ the techniques of Murphy et al in the Openlander et al antenna, particularly since there are two ground planes employed therein.

A skilled artisan would have found it obvious that there is no decrease in gain at zenith when the lens is employed in Openlander because Murphy shows at least three distances in Fig. 5 in which the patch may be disposed above the ground plane (30 in Fig. 6). When the distance "b" is chosen, for example, there is no decrease in gain at the zenith unless the distance "c" is employed. Since Openlander uses the lens to provide improved gain below 45 degrees. However, a skilled artisan would lower the distance between ground planes, say for example from "c" to "b" as taught by Murphy in order to maintain a usable gain at the zenith. The same could be said by lower the distance from "b" to "a".

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The lens 60-64 in Openlander is formed as a dome. Specific gain and angles in the pattern are obvious to vary to the skilled artisan because they depend upon materials used for the lens and its thickness.

4. Claims 9-13 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Openlander in view of Murphy et al. as applied to claims above, and further in view of Nichols et al. (5831577).

Adding a monopole to a microstrip antenna is shown to be obvious by Nichols et al in Fig. 3, where a dielectric 68 is disposed around the monopole 66. It would have been obvious to add a monopole to the Openlander/Murphy et al antenna for adding an additional frequency band in the system.

Allowable Subject Matter

5. Claims 6 and 17 are allowed.

Response to Arguments

6. Applicant's arguments filed 12/3/2004 have been fully considered but they are not persuasive. Specifically, as now set forth above in the primary reference rejection, it can be seen that lowering the distance between ground planes (as taught by Murphy et al) can increase gain at zenith, while the lens structure in Openlander increases gain near the horizon (below 45 degrees). A skilled artisan recognizes as obvious that these techniques may be employed in conjunction in order to establish the type of radiation pattern desired.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Wimer whose telephone number is (571) 272-1833. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun O. Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael C. Wimer
Primary Examiner
Art Unit 2828

MCW
3/9/2005